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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

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In the Matter of	)	
	)	
Amendment of Section 2.106 of the	)	ET Docket No. 95-18
Commission's Rules to Allocate	)	
Spectrum at 2 GHz for Use	)	
by the Mobile Satellite Service	)	

To the Commission:

REPLY COMMENTS OF INMARSAT

Inmarsat, by its attorneys, respectfully submits these Reply Comments in response to comments made in connection with the Federal Communications Commission's (FCC or Commission) Third Notice of Proposed Rulemaking (Third NPRM) in the above-referenced docket.[1]

I. Introduction:

As the developer of an advanced global Mobile Satellite Services (MSS) system, Inmarsat has a direct interest in the efficient allocation of 2GHz spectrum and the smooth transition of this spectrum to MSS. The decisions the Commission makes with regard to the relocation of Broadcast Auxiliary Services (BAS) from the 1990-2025 MHz band and Fixed Service Microwave licensees from the 2165-2200 MHz band, may very well serve as a global model and precedent for market opening for MSS systems. Accordingly, Inmarsat respectfully urges the Commission to take into account not only the specific dynamics of 2 GHz spectrum allocation in the United States, but also the ramifications of its decisions on the world-wide commercial and technical viability of MSS.

II. Transition issues with respect to BAS licensees

Inmarsat maintains MSS entrants should not be required to bear the cost of relocation of incumbent BAS licensees. That being said, other relocation issues, such as relocation deadlines and negotiation and sunset timeframes need to be resolved in a manner that best promotes consumers' interests by assuring the viability of MSS technology.

A. Allocation of relocation costs

During the comment period, several parties suggested that the MSS entrants should bear the full costs associated to the relocation of the incumbent BAS systems in operation in the band 1990-2025 MHz.[2] Inmarsat wishes to reiterate its view that MSS entrants should not bear the cost of that relocation. Transition from outdated analogue technology to a more efficient digital technology, which would allow the use of narrower channel spacing, is a fully expected and natural technological evolution for BAS operators to carry out in the next few years. The fact that the 2 GHz MSS spectrum allocation process has intervened during this transition does not justify creating a windfall for the BAS operators by turning relocation into a commercial advantage for BAS incumbents while jeopardizing the commercial viability of MSS networks. It should further be noted that WRC-95 has adopted Resolution 716, which urges Administrations to plan the transition of its Fixed Services (FS) in order to accommodate the MSS for the benefit of the user community. Such relocation costs, if borne by the MSS operators, would be equivalent to a spectrum access fee and severely impact the viability of global MSS providers, especially if other countries decide to follow the same path.

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[1] FCC 98-309, Memorandum Opinion and Order and Third Notice of Proposed Rulemaking and Order, released November 25, 1998.

[2] *See,* Society of Broadcast Engineers (SBE) at 4, American Petroleum Institute (API) at 4-5, and Association of Americas Public Television Stations (APTS) at 4.

In view of the foregoing, Inmarsat submits that MSS entrants should not be responsible for the costs of BAS relocation and rechannelization. Nevertheless, Inmarsat offers the following views on the various proposals presented in relation to the BAS relocation process.

Under no circumstances should MSS entrants be required to pay the full relocation and rechannelization costs of BAS operators in the 1990-2025 MHz band. The Commission should instead adopt firm rules that would require BAS incumbents to recognize the depreciation of their current equipment. Under these circumstances, BAS licensees would bear at least a share of the costs of complying with the Commission's reallocation rules. Such a division of financial burdens would offset the BAS incumbents' undeserved windfall of free equipment upgrades, reduce the de facto commercial barrier to MSS spectrum access (and the corresponding risks of international replication of such barriers), and improve the commercial viability of the global MSS networks that the United States has worked so hard to promote.

In this context, Inmarsat supports the following principles:

- BAS equipment licensed after a reasonable date to be set by the Commission should not be eligible for relocation reimbursement;[3]
- MSS licensees should only pay the minimum cost for equipment with capabilities similar to current equipment;[4] and
- MSS licensees should only pay for the depreciated cost of equipment.[5]

B. Timing of relocation

Technical studies indicate that MSS systems would not be able to operate in the interference environment created by the current population of BAS equipment.[6] Relocation of

[3] ICO Services Limited (ICO) at 7. ICO suggests March 14, 1997.
[4] ICO USA Service Group (IUSG) at 30, Constellation Communications, Inc (Constellation) at 6.

BAS from the 1990-2025 MHz band is therefore required for satisfactory operation of MSS. The issue is whether relocation should be done on a date certain or through a gradual transition approach.

Several commenters favor relocation on a date-certain,[7] while others prefer gradual relocation.[8] A requirement that relocation occur before a date certain presents obvious advantages such as giving MSS operators the freedom to optimally implement their systems in the 1990- 2025 MHz band and allowing BAS systems to operate in a new channel plan in the same way they operate under the current plan. Of course commenters also identified disadvantages to a date-certain policy such as the uncertainty of equipment availability and the practical/logistical feasibility of implementing the relocation.[9]

A gradual transition would avoid the difficulties of making thousands of new pieces of equipment available at once. It would also spread out the cost of relocation over a longer period. On the other hand, it would complicate BAS operations during the transition period due to the difficulty of coordinating the simultaneous operation of analog and digital equipment, and may also constrain the deployment of MSS systems. Furthermore, the gradual approach proposed by ICO [and others] may result in higher costs than a "one-off" transition since the digital equipment will have to be capable of tuning into two different channel rasters.

Another issue to consider in date-certain relocation is that relocation needs to take place before MSS systems start to operate, (i.e. by the end of 2000 since the first MSS system

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[5] IUSG at 33; The Boeing Company (Boeing) at 2.
[6] *See, e.g.,* CPM Report to WRC-95, Rec ITU-R M.1141 and 1142.
[7] *See*, Iridium LLC (Iridium) at 4, Globalstar, L.P. (Globalstar) at 4, SBE at 4, BST, Inc. (BST) at 11.
[8] IUSG at 16, Boeing at 5.
[9] IUSG at 19, BST at 12.

is scheduled to begin operations at that time.)[10] The difficulty of achieving a complete relocation before the first MSS system comes into operation would seem to favor a gradual transition, but the different stages in a gradual transition approach need to be well defined with dates specified by the FCC, which take into account the needs of all participants in this process. It is also important that in such an approach all participants contribute proportionally, irrespective of the time of their systems come into operation.

C. Apportionment of BAS relocation costs among MSS licensees

As the Commission has noted, the differing service timetables of MSS licensees necessitates the creation of a formula to fairly allocate the costs of relocating BAS incumbents among earlier and later MSS entrants. ICO suggests that costs should be divided between MSS operators based on the specific costs for the particular spectrum assignment,[11] whereas Iridium suggest that the total relocation costs should be divided among MSS licensees pro-rata in accordance with the amount of spectrum available to it.[12] Inmarsat is of the opinion that Iridium's is a fairer approach because it requires the entrants with the greatest capacity to contribute proportionately and avoids the potential inequities associated with each entrant separately reimbursing the relocation costs of individual incumbents. It should be noted that even a gradual transition approach does not preclude the possibility of dividing the costs pro-rata based on spectrum allocations.

D. Negotiation period and sunset date

Inmarsat believes that a rapid, effective relocation and re-channelization of BAS to fit its operations into the 85 MHz at 2025-2110 MHz will serve the public interest by securing the benefits of MSS technology for consumers. In order to achieve this, the negotiation

[10] ICO at 1.
[11] IUSG at 52.
[12] Iridium at 5.

periods should be as short as possible and the time period until the sunset date kept to a minimum.

In its comments, ICO proposed that the mandatory period of negotiation end one year after the issuance of the Commission's forthcoming Report and Order in this proceeding.[13] Constellation on the other hand proposed that the negotiation period should be tied to the date of MSS licensing.[14] The decision over which option to choose will be based on whether the relocation of BAS takes place on a date certain or is done gradually. If BAS relocation is done on a date-certain, the mandatory negotiation period has to be set consistent with the implementation schedules of the earliest MSS entrants. By contrast, under a gradual BAS relocation policy the mandatory negotiation period can be tied to the implementation schedule of each MSS licensee individually. One important point to remember is that the start and end of the negotiation periods have to be consistent with the planned implementation schedules of MSS systems. In order to achieve this, Inmarsat supports a complete suppression of the voluntary negotiation to avoid delay in the introduction of 2 GHz MSS service in the United States.

In order to provide incentives for productive negotiations among incumbents and entrants, it is critical that the Commission establish a reasonable sunset date for BAS relocation negotiations. Since the useful life of mobile ENG equipment is considerably shorter than that of the FS equipment previously at issue, Inmarsat favors shortening the total time period required to reach the relocation sunset date.[15] Inmarsat also supports the de-coupling of the sunset date from the negotiation periods.[16]

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[13] IUSG at 10.
[14] Constellation at 6
[15] The time period to reach the sunset date is currently 10 years under the Emerging Technologies rules, 47 CFR § 101.79.
[16] *See*, Constellation at 5.

The comments on where to set the sunset date vary from a preference for no sunset date[17] to a 3-year period counting from MSS licensing.[18] Globalstar and ICO both propose shortening the sunset period to less than the ten years specified in the Emerging Technologies rules, with ICO proposing a date around 2005.[19] Others suggested either delaying the date or removing it altogether.[20]

Inmarsat believes that setting a sunset date is essential for providing MSS operators assurance that spectrum will be available to provide their service. Furthermore, Inmarsat supports setting the sunset date in the reasonably near future. The 2 GHz frequency bands were allocated internationally to MSS at WARC-92 based on U.S. proposals, and WRC-95 adopted Resolution 716, which urges Administrations to transition their existing terrestrial fixed services from the bands. Incumbent operators have thus known for several years that these bands would not be available indefinitely and that they may have to move.

Inmarsat therefore advocates that a reasonably short period to sunset, not more than four (4) years from the release of the Third NPRM (November 25, 1998) would be appropriate since it would assure MSS operators that spectrum will be available, and provide sufficient time for a gradual transition to take place.

III. Fixed Service Issues

Unlike the relocation issues surrounding BAS licensees, FS interference and relocation issues allow more flexibility for the Commission, the FS licensee and the MSS entrant. The Commission should work to ensure that its rulemaking allows the different

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[17] APTS at 7.
[18] Iridium at 2-3.
[19] Constellation at 5. "Thus Constellation recommends that January 31, 2005 be set as the sunset date for BAS relocation, which is ten years from the initial proposal to reallocate BAS spectrum."
[20] APTS at 7, SBE at 5.

interested parties to work together in a manner that is beneficial for MSS operators, FS licensees and consumers alike.

A. Feasibility of sharing spectrum between MSS and FS

AAR suggests that sharing between MSS and FS in the band 2165-2200 MHz is not feasible.[21] The cases cited by AAR, however, are not identical to the sharing that would take place in the 2165-2200 MHz band. It is true that there will be situations when mobile earth stations (MES) will receive interference from FS transmitters and that this will limit the service area or service quality of the MSS system, but the extent to which this will be acceptable can only be determined through detailed studies or field trials. Inmarsat believes that a determination as to whether the presence of FS-to-MES interference calls for relocation of FS systems should be a business decision for the MSS operator.

AAR also discusses the interference from MSS downlinks to FS receivers and concludes that a hard MSS power flux density limit is required to protect the FS receivers.[22] This is not true. Studies in both the ITU[23] and in TIA[24] have demonstrated that the statistical nature of MSS interference, due to satellite movements and FS propagation variation, will allow sharing to take place, at least in certain cases.[25] In fact, TIA has completed TSB86, which details methods and criteria suitable for MSS/FS coordination. Similar methods have been developed by the ITU in Recommendation ITU-R M.1319. Inmarsat argues that MSS and FS parties should be required to conduct coordination following the procedures recommended by the TIA, with relocation being required only if it is demonstrated that harmful interference would otherwise result.[26]

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[21] *See*, Association of American Railroads (AAR) at 4-5.
[22] AAR at 6-7.
[23] Rask Group 8/3, Task Group 2/2, Working Party 8D.
[24] JWG RT-34/TR-14.11/NSMA.
[25] *See, e.g.*, the CPM Report to WRC-95, Rec ITU-R M.1141, 1142, 1143 and 1319.
[26] IUSG at 40-41; Celsat America, Inc. at 2.

B. Fixed Service relocation costs

If it is established that a particular FS link needs to be relocated due to harmful interference from a MSS system, Inmarsat urges that the following proposals be accepted:

- MSS licensees should not have to pay for relocation if the relocation is necessitated by the auction winning licensee;[27] and
- Any relocation payments should be limited to the depreciated value of equivalent equipment.[28]

C. Apportionment of FS relocation costs among MSS licensees

In principle, Inmarsat supports the views of ICO and others that a MSS licensee should only pay for relocation of FS systems that need to be relocated due to interference from the licensed MSS system. However, as Globalstar pointed out in its comments, in cases where more than one MSS system is operating co-frequency with a particular FS link, the cumulative interference effect needs to be considered.[29] This circumstance is possible where two MSS systems (using CDMA technology) share frequencies, or MSS systems licensed in adjacent frequency blocks have frequency overlap with the same FS system. When this occurs, Inmarsat agrees with Globalstar that the cost of relocation should be divided between all involved MSS licensees. Inmarsat, however, does not support Globalstar's suggestion that later entrants should get a discount, but is of the opinion that the relocation costs of those FS systems that would receive harmful interference should be shared between the interfering MSS systems in proportion to their spectrum assignments.[30]

D. Negotiation period and sunset date

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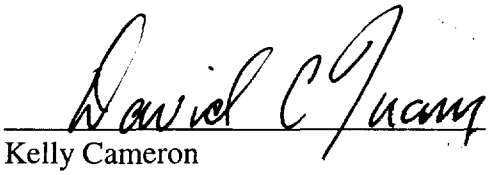
[27] Constellation at 8.
[28] Boeing at 2, IUSG at 44.
[29] Globalstar at 5.
[30] *Id.* at 7.

As stated previously, Inmarsat believes that when relocation of FS systems is necessary due to harmful interference, rapid, effective relocation of FS systems will best serve the public interest by securing the benefits of MSS technology for consumers. To this end, and for the reasons stated in Section II(D) of these comments, Inmarsat supports a short negotiation time frame and a sunset date that is not more than four years from the release of the Third NPRM (November 25, 1998).[31]

IV. Conclusion

Inmarsat submits these reply comments to promote the fair resolution of relocation issues, and the efficient reallocation of 2 GHz spectrum, in a manner that permits the rapid implementation of MSS service in the United States and around the world. To this end, the Commission should examine commercial realities to ensure that incumbent licensees do not unjustly benefit from the relocation process, and that global MSS networks are able to serve their customers in a cost-effective manner.



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[31] AAR, API and Association of Public-Safety Communications Officials-International, Inc. (APCO) proposed delay or removal of the FS sunset date. (AAR at 9, API at 10, APCO at 2) UTC, API and APCO suggested lengthening of the negotiation periods proposed by the FCC. (UTC, The Telecommunications Association at 4, API at 6, APCO at 3) Any lengthening of the negotiation period would threaten to delay the introduction of s GHz MSS systems in the United States.

CERTIFICATE OF SERVICE

I, Christine Jackson, do hereby certify that on this 5th day of March 1999, I caused copies of the foregoing "Comments" to be served via hand delivery to the following:

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